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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/531,274	04/13/2005	Gert Andersson	2921-0148PUS1	5065

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BIRCH STEWART KOLASCH & BIRCH
PO BOX 747
FALLS CHURCH, VA 22040-0747

EXAMINER	
VARGOT, MATHIEU D	
ART UNIT	PAPER NUMBER
1791	

NOTIFICATION DATE	DELIVERY MODE
07/29/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/531,274	ANDERSSON ET AL.	
	Examiner	Art Unit	
	Mathieu D. Vargot	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 June 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1.Claims 1-14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Applicant has amended claim 1 to recite that the light shaping unit is formed form a "layer of non-photoresist" material and there is no support for this limitation. While applicant may not **expressly** state that the material used to make the light shaping unit **is a photoresist,** there is no disclosure that it is not or cannot function as a photoresist. Many plastics can be used as photoresists or made to function as such by adding photosensitizers. Hence, it is submitted that applicant does not have support for saying the material is not a photoresist. Negative recitations require clear support in the specification as filed to prevent the "claiming around" of a reference by simply stating the invention is not what is disclosed in the reference.

2.Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, line 5, "said carrier layer" lacks antecedent and should simply be –said carrier--. Also, in claims 1 and 15, it is unclear exactly what "intermediate" means with respect to the micromechanical plate and clarification is required concerning this term. Claim 7, line 2, --in—should be inserted after "carrier". Also, if the lens acts as an etch stop as recited in instant claim 8, should not the "forming" of instant claim 7 and 8 be –etching--?

3.The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 2 and 5-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Sun et al.

Given that the instant material used for the light shaping unit has not been disclosed as a "non-photoresist" material, it is submitted that claim 1 and its dependents 2 and 5-14 are anticipated by the applied reference. Clearly, newly added claim 15 is anticipated. Sun et al (see col. 3, lines 26-33) teaches that a photoresist material is applied to a carrier made of another material, the carrier being the multilayered $Si/SiO_2/Si$ with part numerals 72/74/76 in Fig. 2. The fabrication is taught as thus: First, a cavity 15 is etched in layer 72, with layer 74 acting as the stop etch (ie, the silicon dioxide layer 74 is not etched), then a hole is etched in layer 76 from the top in region 13 (ie, a region above where the cavity was formed) and then the photoresist is formed over region 13 by photolithography and resist reflow to make the microlens. The microlens 12 is clearly formed on Si layer 76 as shown in Fig. 2. Then, additional etching is performed to form the final structure shown in Fig. 2, and as Sun et al teaches, this final etching entails the "etching of comb drive structure and the stage". The final additional etching clearly forms the stage 10 (ie, intermediate micromechanical plate) on which the microlens 12 rests and which must be mobile with respect to the remainder of the layers 72 and 74 that are not etched or removed. Note that Figure 2

of Sun et al shows various portions of layers 74 and 76 that have been etched away to in fact form the stage 10 from the carrier material. Hence, it is rather clear that Sun et al teaches forming the light shaping unit first from a material provided on a carrier of another material and subsequently forming a plate or stage from the carrier, wherein the plate/stage supports the light shaping unit. Again, applicant has not shown that the instant light shaping unit is made from a non-photoresist material. Sun et al deposits the light shaping unit material on the carrier (instant claim 2), the micromechanical structure is formed under the light shaping unit (claim 5), ultimately the micromechanical structure is formed from above and below (the hole and the cavity, respectively for instant claims 6 and 7), an optical component (VCSEL 65) is attached to the bottom of the micromechanical structure (claim 9), wherein the light passage channel (15, 13) functions is a cavity or waveguide (instant claims 10 and 11) and instant claims 12-24 are met. Concerning instant claim 8, upon formation of the complete cavity existing below microlens 12 as shown in Figure 2, it is submitted inherent that the lens acts as a stop etch in the formation of the opening.

4.The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sun et al in view of Japanese document 2000-155,201.

Sun et al discloses the basic claimed method as set forth in paragraph 3, supra,, the primary reference essentially lacking a showing of making the light shaping unit – lens—from a non-photoresist material. Japanese document -201 teaches that microlenses are made by embossing a resin that is not a photoresist. Embossing a resin is a conventional way of making a microlens and one of ordinary skill in the art would have been expected to know of the different methods for forming microlenses. It would have been obvious to one of ordinary skill in the art at the time of invention to have employed an embossing to form the microlens in lieu of the photoresist reflow dependent on the exact material desired to make the lens and its accompanying optical properties.

5.Applicant's arguments with respect to claims 1-15 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's comments have been noted, including those made in the interview preceding the filing of the RCE. Upon more careful review of the Sun et al reference, it has become clearer that the lens is formed prior to the actual forming of the stage or plate on which the lens rests. Ie, when the lens is first formed, the carrier supports it and the stage/plate is then etched from the Si layer 76 of the carrier. Figure 2 and a careful reading of column 3, lines 26-33 confirm this. One of ordinary skill in the art would know how to perform the etching to make the movable stage while the lens is in fact thereon a portion of the carrier that will become the stage. Contrary to applicant's comments, Sun et al does not teach that the stage is formed first and then the lens. If applicant can indeed support that the instant lens material is not a photoresist, the 102

on claims 1, 2 and 5-14 will be dropped—however, these claims would then be rejected under 103 as set forth supra. Instant claim 15 is submitted to nevertheless be properly rejected under 102.

6.Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mathieu D. Vargot whose telephone number is 571 272-1211. The examiner can normally be reached on Mon-Fri from 9 to 6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson, can be reached on 571 272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://portal.uspto.gov/external/portal. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

M. Vargot
July 24, 2010

/Mathieu D. Vargot/
Primary Examiner, Art Unit 1791